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SUBJECT *(Descriptive title. Use individual reports for separate subjects)*
WITH THE HELP OF RADIO RANGE FINDER
(Altitude Control in Direct Approach Landing)

SUMMARY *(Give summary which highlights the salient factors of narrative report. Begin narrative text on AF Form 112a unless report can be fully stated on AF Form 112. List inclosures, including number of copies)*

Forwarded herewith is a summary of an article by Major N. Rybnikov and Senior Lt. L. Gerasimov, Air Force Navigators I Class, entitled "With the Help of Radio Range Finder (Altitude Control in Direct Approach Landing)" (S pomoshch'yu radiodal'nomera -- Kontrol' vysoty pri zakhode na posadku "s pryamoy") which appeared in N: Sovetskaya Aviatsiya (Soviet Aviation), No. 72, 26 March, 1958, p. 2.

The authors describe in detail the method of altitude control in direct approach landing with the help of radio range finder.

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Sketch showing direct approach landing altitude control with the help of radio range finder.

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WITH THE HELP OF RADIO RANGE FINDER

(Altitude Control in Direct Approach Landing)

Major Rybnikov and Senior Lieutenant Gerasimov review a method of altitude control in direct approach landing with the help of radio range finder. This method, developed by the Air Force Major General Donchenko, implies the use of SD-1 radio range finder and permits the pilot to begin controlled airplane descent as far as 30 km away from the airfield. The authors of this article tested Donchenko's method and found it excellent.

Rybnikov and Gerasimov [redacted] that the usual landing methods with the use of marker beacons are more difficult and less precise than the method described, inasmuch as the average pilot is unable to control his landing altitude properly.

Direct approach landing altitude control with the help of radio range finder consists of the following (see sketch). In heading for landing the airplane is brought to the initial control altitude (1). While descending, the pilot controls his altitude according to the remaining sloping flight distance (2) to the airfield.

The entire preliminary calculations and preparation for flight (for a given airfield and type of the plane) are performed only one time. Before the flight the pilot calculates, for the landing field, the initial altitude of the control and the vertical speed of descent in accordance with the speed of gliding and the distance from the ground transponder (3) to the outer radio marker.

The angle of the landing path and the necessary vertical speed of descent for the given speed of the glide, and the initial control altitude (for a given sloping flight distance) is calculated with the help of formulas.

Since the gliding landing path of the airplane is a given case represents a straight line, all the subsequent altitude calculations will change in direct ratio to the alterations in the corresponding slope distances. The authors provide concrete illustrations.

вен 2°51', то начальная высота контроля (Нзач) будет равна 1.500 метрам. При показаниях дальномера 20 км и 10 км она будет соответствовать расчетным высотам 1.000 м и 500 м.

Выполняя полеты, мы взяли

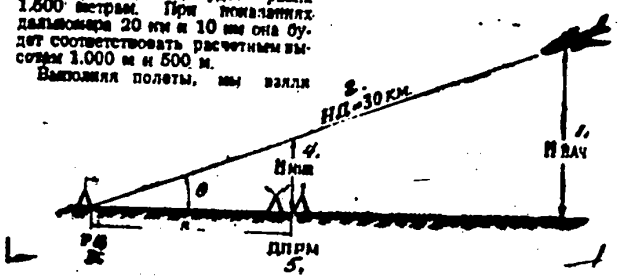

Fig. 1 - Sketch showing direct approach landing altitude control with the help of radio range finder

1 - Initial control altitude,

2 - Sloping flight distance,

3 - Ground transponder,

4 - Minimum altitude, and

5 - Outer marker.

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